REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-27 are presently active in this case.

The outstanding Office Action rejected Claims 1, 5, 7, 9-11, 13-14, and 23-25 under 35 U.S.C. §102(b) as anticipated by Lockhart (U.S. Patent No. 4,521,749). Claims 15 and 26 were rejected under 35 U.S.C. §102(b) as anticipated by Hess et al. (U.S. Patent No. 5,170,413; herein "Hess"). Claims 18-22 and 27 were allowed and Claims 2-4, 6, 8, 12, and 16-17 were indicated as allowable if rewritten in independent form.

Applicants acknowledge with appreciation the indication of allowable subject matter. However, since Applicants believe that Claims 1, 5, 7, 9-11, 13-15, and 23-26 define patentable subject matter, Claims 2-4, 6, 8, 12, and 16-17 are maintained in dependent form at present time.

In response to the rejection of Claims 1, 5, 7, 9-11, 13-14, and 23-25 under 35 U.S.C. §102(b) over Lockhart, Applicants respectfully request reconsideration of this rejection and traverse the rejection, as next discussed.

Briefly summarizing, Claim 1 relates to a filter circuit including: a complex block which realizes a complex zero of a transfer function; a real/pure imaginary block which realizes a real zero of a transfer function and a pure imaginary zero of the transfer function; and a single path circuit which couples the complex block with the real/pure imaginary block through a single-path. Independent Claims 7 and 11 recite similar features.

As explained in Applicants' specification at page 5, lines 4-9 with corresponding Figure 2, Claim 1 improves upon background filter circuits because both real and complex zeros of a transfer function for grip delay compensation can be realized, the filter characteristics can be easily adjusted, and unwanted parasitic couplings can be suppressed.

Turning now to the applied reference, <u>Lockhart</u> describes a method for the modulation of a carrier signal using both amplitude and angle modulation, wherein complex zeros in an amplitude modulation signal are detected,[1] so as to perform zero synchronous frequency modulation (ZSFM). In Figures 5a and 5b, <u>Lockhart</u> further explains the details of the ZSFM system that is used, wherein reference numeral 20 represents a terminal for applying a signal to a bank 21 of filters.[2] However, <u>Lockhart</u> fails to teach or suggest a real/pure imaginary block which realizes a real zero of a transfer function and a pure imaginary zero of the transfer function, as recited in Applicants' Claim 1. The outstanding Office Action relies on <u>Lockhart</u> at column 5, lines 63-67 as teaching this feature. Applicants respectfully disagree, since <u>Lockhart</u>'s logic circuit 23 coupled to the detectors 22 merely returns the imaginary root value of the detected zero.[3] In other words, <u>Lockhart</u> detects a complex zero and subsequently detects its imaginary part.[4] These complex zeros are shown in <u>Lockhart</u>'s Figures 2a-2c. Detecting a complex zero, with a real and an imaginary part, as taught by <u>Lockhart</u>, *is not* realizing a real zero of a transfer function and a pure imaginary zero of the transfer function, as recited in Applicants' Claim 1.

Independent Claims 7 and 11 recite features analogous to the features recited in independent Claim 1. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicant respectfully submits that the rejections of Claims 7 and 11, and all associated dependent claims, are also believed to be overcome in view of the arguments regarding independent Claim 1.

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[1] See <u>Lockhart</u> in the Abstract.
[2] See <u>Lockhart</u> for example at column 5, lines 47-58.
[3] See <u>Lockhart</u> at column 5, lines 64-67.
[4] See <u>Lockhart</u> at column 5, lines 53-58.

Accordingly, Lockhart fails to teach or suggest every feature recited in Applicants'

independent Claims 1, 7 and 11, and it is therefore respectfully submitted that Claims 1, 5, 7,

9-11, 13-14, and 23-25 patentably define over Lockhart.[5]

In response to the rejection of Claims 15 and 26 under 35 U.S.C. §102(b) over Hess,

Applicants also respectfully request reconsideration of the rejection and traverse the rejection,

as next discussed.

Hess describes a quadrature amplitude modulation (QAM) transmitter, used for

telecommunications, wherein a serial bit stream is reformatted in parallel data streams.[6] Hess

further explains that each parallel data stream is passed through a pulse shape filter 18, and is

subsequently multiplied with the modulator 20 by a sine wave signal. In addition, Hess

teaches that the output of modulator 20 is a complex zero intermediate frequency (IF) signal.[7]

However, Hess fails to teach or suggest a first complex block which realizes a complex zero

of a transfer function, as recited in Applicants' independent Claim 15. Hess clearly explains

that the complex zero signal, after the modulator 20 (multiplication), is related to the

constellation map of a 16 level QAM signal, as further shown in Hess' Figure 7.[8] Therefore,

Hess' teachings are not able to realize a complex zero of *a transfer function*. Accordingly, a

signal having a complex zero after a modulation with a sine wave signal, as taught by Hess, is

not a first complex block which realizes a complex zero *of a transfer function*, as recited in

Applicants' Claim 15.

Therefore, the applied reference Hess fails to teach or suggest every feature recited in

Applicants' claims, so that Claims 15, and dependent Claim 26, are believed to be patentably

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[5] See MPEP §2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP §2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."
[6] See Hess at column 5, lines 22-33.
[7] See Hess at column 5, lines 59-63.
[8] See Hess at column 5, lines 29-37.
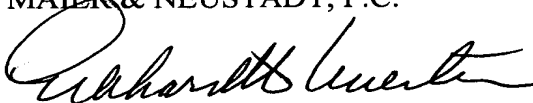
distinct over <u>Hess</u>. Accordingly, Applicants respectfully traverse and request reconsideration of the rejection based on <u>Hess</u>.[9]

Consequently, in view of the present Request for Reconsideration, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-27 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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[9] See MPEP 2131: "A claim is anticipated <u>only if each and every</u> element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."